



02/09

# The SUBSEA newsletter

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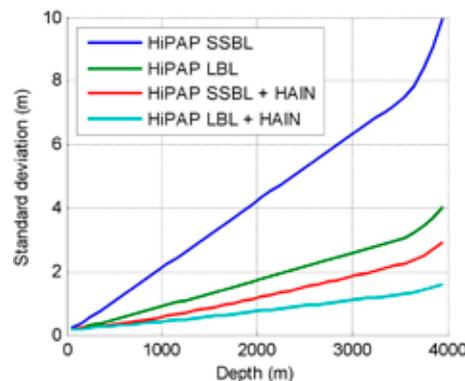
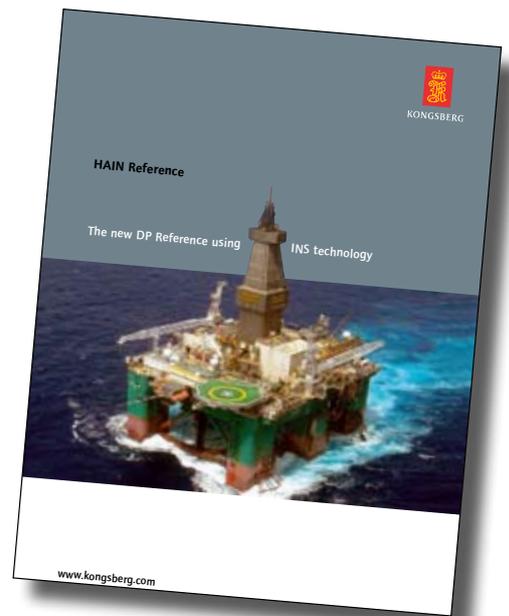
## New product release! HAIN Reference system for DP

No one disputes the statement “A Dynamic Positioning (DP) system can never become better than its references” for holding the vessel automatically in wanted position.

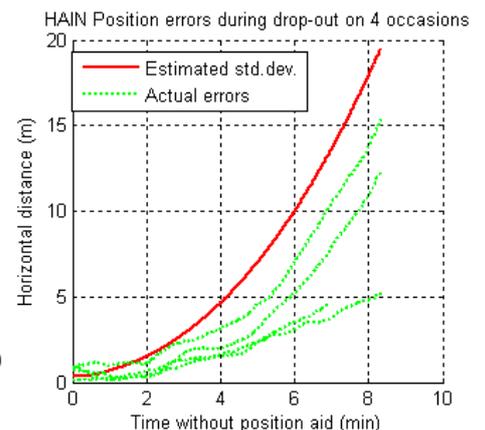
The HAIN Reference system uses the latest technology for providing the best and most reliable underwater DP reference. By its unique feature of combining both acoustic and inertial technologies HAIN Reference will ensure highest quality position data and update rate.

### A brochure for the new HAIN Reference is now Available.

The brochure presents ‘The new DP Reference using INS technology’ and can be downloaded from our web page. <http://www.km.kongsberg.com/> - products – Hydroacoustic products – Positioning - Acoustic aiding of inertial navigation



Improvements and DP weighting.



Performance during acoustic dropout.



## FEMME 2009 Attracts Record Number of Delegates

Kongsberg Maritime's biennial user conference for hydrography attracted a record number of delegates. As many as 210 participants attended FEMME 2009 in Lisbon, Portugal, 21st - 24th of April.



*Sales Manager Hydrography in Kongsberg Maritime, Helge Uhlen*

This year's conference was the 12th in line, and had a varied program of tutorials by Kongsberg Maritime's experts, product presentations and user papers. Sales Manager Hydrography in Kongsberg Maritime, Helge Uhlen is very pleased with the response at this year's conference:

"The purpose of FEMME is that clients can exchange ideas and user experiences. It is an important event enabling us to get closer to our customers and get

useful feedback from them. In addition to a record number of participants this year, the papers held a particularly high standard. I would say that FEMME 2009 was the best conference so far," he says.

### Openness a key to success

A large part of the conference was set aside for users' experiences with the products. As many as 29 papers were presented by participants from different institutions around the world and the conference had an atmosphere of openness and information exchange.

Among the speakers was senior hydrographer at the Canadian Hydrographic Service, Michael Lamplugh. He thinks that openness is the key to FEMME's success.

"The Canadian Hydrographic Service has been a user of multibeam since the 1980s. Since we know these products well, it is important for us to attend the conference and interact with other users. FEMME is an important event because it enables discussions and Kongsberg Maritime listens to our experiences," said Michael Lamplugh.

Xavier Lurton of IFREMER, the French

Research Institute for Exploitation of the Sea, added:

"All the expertise from Kongsberg Maritime is here so we can interact and get new information. It is also a good place to meet other clients. You can talk frankly and Kongsberg Maritime's representatives really listen to what you say. The technical and scientific level at this year's conference was very good, perhaps the best so far with interesting papers and a well balanced programme."

### Honoured to host FEMME

During the opening of the conference, Vice President for Sales & Marketing of Kongsberg Maritime's subsea products, Arnt-Helge Olsen, gave a brief presentation of Kongsberg Maritime's products and history, before introducing this year's opening speaker, Admiral José Augusto Brito, director of the Portuguese institute of hydrography. Brito praised Kongsberg Maritime's initiative to arrange a user conference for hydrography.

"Since 1997, the Portuguese Institute for Hydrography has used multibeam for mapping the sea floor. I would like to thank Kongsberg Maritime for having



developed this leading edge technology and for arranging this conference. We are honoured to host FEMME 2009”, said Brito in his speech.

In addition to the 210 conference participants, several delegates had brought their spouses, who could sign up for a separate program. They had the opportunity to participate in a guided tour through the city centre of Lisbon, including a visit to the famous bakery Pasteis de Belem, Europe’s oldest tiles and ceramics factory and Cascais, a fishing village 30 kilometres west of Lisbon. A conference dinner marked the final night of the conference, where both delegates and spouses were invited.



*Spouses who could sign up for a separate program*



*The Portuguese Secretary of State for Defence and Sea Affairs, Dr. João Mira Gomes*

### **Portuguese Secretary of State Closes FEMME 2009**

Cooperation was the key word when the Portuguese Secretary of State for Defence and Sea Affairs, Dr. João Mira Gomes, gave the closing address at FEMME.

In his speech, Gomes drew attention to the importance of technological development and international cooperation, with special emphasis on the maritime cooperation between Portugal and Norway.

“Kongsberg Maritime is well known for its high tech solutions which are used in many sectors and countries around the world. Portugal is one of those countries. The task force on the extension of the continental shelf has worked with Norwegian partners. Kongsberg Mari-

time has been responsible for developing some of the technology which this project relies on”, said Gomes.

He further emphasised the significance of this conference in promoting international cooperation:

”Portugal’s link to the sea is an endeavor at present and an ambition of the future. In our effort to meet this ambition, we will continue along two fields; technological development and international cooperation. This conference is an example of the technological development and international cooperation we want to promote”.

Gomes was accompanied by the Norwegian ambassador to Portugal, Mrs. Inga Magstad, and Admiral José Augusto Brito from the Portuguese Institute of Hydrography.

**The U.S. Hydro 2009 Conference sponsored by The Hydrographic Society of America was held at the Sheraton Waterside Hotel in Norfolk, Virginia on May 11-14, 2009.**



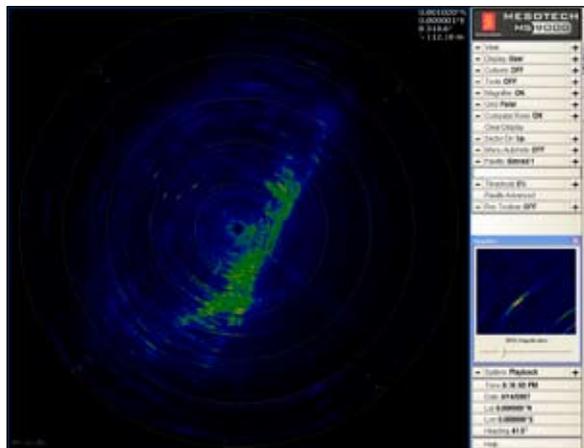
*From left: Bill Hone, GeoAcoustics, Dr. Savithri (Savi) Narayanan, Dominion Hydrographer, Canadian Hydrographic Service, Dr. Tom Hiller, GeoAcoustics, Karl Wm. Kieninger, Kongsberg Underwater Technology, Treasure of The Hydrographic Society of American, Jan Haugh Kristensen, Kongsberg Maritime AS, Jeff Condiotty, Kongsberg Underwater Technology.*

U.S. Hydro 2009 is a continuation of the series of hydrographic conferences that alternate between the United States and Canada. This is the twelfth U.S. Hydrographic conference and was very well attended with over 420 delegates.

The KONGSBERG team introduced the new EM 2040 “The only true wide band high resolution multibeam” and presented the wide range of Kongsberg Hydrographic products from Kongsberg Maritime, Kongsberg SeaTex, GeoAcoutics, and Hydroid.

## Kongsberg Releases White Paper on Military and Civilian Port Security

**New Advances in Sonar Diver Detection Systems: The Hidden Threat Facing Military and Civilian Ports**



MS9000 Screen 360° at 300m



DDS9000-STT on Tripod

Vancouver, B.C.—May 1, 2009—Kongsberg Mesotech Ltd., a world leader in sonar diver detection technology systems, is pleased to release a white paper outlining the most recent technological advances in sonar technologies and how these can protect military and civilian ports and visiting ships from attack by enemy divers. The white paper is entitled “New Advances in Sonar Diver Detection Systems: The Hidden Threat Facing Military and Civilian Ports.”

This new Kongsberg white paper outlines the hidden threat presented by underwater diver incursion, as evidenced by groups such as the Tamil “Sea” Tigers having been able to mount successful underwater attacks in ports. It also reviews the latest technological improvements in underwater acoustical diver detection systems in these key areas: hardware, tracking software and data fusion/systems integration. “The increased use of divers by groups such as the Tamil Tigers to attack from

the water demonstrates a belief that underwater access presents an easier way to enter ports and attack ships anchored at dockside,” said Phil Andrew, manager of underwater security for Kongsberg Mesotech, a leading global provider of sonar technologies that has provided sonar to the U.S. Coast Guard through its Underwater Port Security Project.

“Drug smuggling and the rise of terrorist threats over the last ten years have increased the need to monitor the underwater lanes of our ports using sonar and other technologies. Fortunately, recent sophisticated innovations are helping to address this problem. This white paper explains how these advances can help improve port security.”

The New Advances in Sonar Diver Detection Systems white paper is available at no charge and can be downloaded under the Kongsberg listing on [www.Naval-Technology.com](http://www.Naval-Technology.com).



**The Dutch survey company Geo Plus operating in the Netherlands and internationally has ordered the 4th EM 3002D multibeam system containing EM 3002D multibeam with computers and sensors.**

Installation took place in April/May this year on board the high speed survey vessel “Geosolution”, a well equipped survey vessel for all kinds of Hydrographic onshore and offshore jobs. Survey speed during the hydrographic work can be 20 knots without any acoustic problems. It will operate in real shallow waters like rivers and canals but also in deeper North Sea waters.

## GeoSwath User Seminar in Qingdao, China



Attendees of the 2009 GeoSwath Seminar held in Qingdao, China.

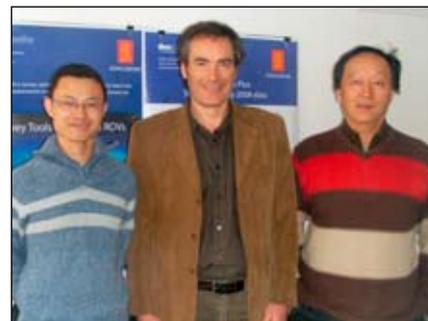
Over 60 Chinese surveyors, engineers and survey managers attended a GeoSwath product seminar in Qingdao, Shandong Province. The attendees came from all over China to learn about the capabilities of the GeoSwath wide swath bathymetry and side-scan. Live demonstrations were followed by lectures on the sonar theory and best survey practice and expert tips were given on processing survey data using the GeoSwath Plus software.

The seminar included data collection using a local boat in Jaizhou Bay. The

survey area varied between 3m and 25m depth and demonstrated the GeoSwath's wide swath capability in shallow water environments. Clients could also see the advantages of the simultaneous bathymetry and side scan data collected by the GeoSwath (A Kongsberg Maritime company). A day in the classroom covering the GeoSwath interferometric sonar theory was followed by live processing and calibration of the collected data and a master class on survey practice.

More than 25 GeoSwath systems are now operational in China. These are

working on projects such as river navigation, coastal mapping, dredge works, port surveys, marine construction and dam monitoring. An example of the GeoSwath's project in China is its use in national hydrographic mapping projects: recently the State Ocean Administration (SOA) East Sea Branch in Shanghai celebrated passing 75,000 line-km of GeoSwath survey for China's National Project 908, a major national coastal and environmental mapping initiative. SOA East Sea Branch now operates two GeoSwath systems out of Shanghai, while China's National Marine Environmental Monitoring Centre in Dalian is approaching 50,000 line-km completed with their GeoSwath sonars.



Mike Zang (China-ORES), Tom Hiller (Geo-Acoustics) and Professor Tang (China-ORES).

## New Hydrography Contracts in South America

**Kongsberg Maritime AS continues to strengthen their position in the Hydrographic market in South America. In Q1/2009 two very important contracts have been signed.**



NHi Sirius

Brazil: The Brazilian Navy Directorate of Hydrography and Navigation (DHN) purchased two EM 302 multibeam echosounders to be installed in Hydrographic Ship "NHi Sirius" and Polar ship "NPo Alte Maximiano".

Both vessels will have EA 600 Single Beam Echo Sounders, and the Polar ship "NPo Alte Maximiano" will also have a SBP 300 Sub Bottom Profiler.



NPo Alte Maximiano

"Visite a página da Marinha na Internet - [www.mar.mil.br](http://www.mar.mil.br) - onde poderão ser conhecidas as atividades desenvolvidas pela Marinha do Brasil."

Ecuador: INOCAR, the Hydrographic Office of the Ecuadorian Navy (DHN) has awarded a contract to Kongsberg Maritime AS for survey equipment for their survey/research vessel BAE Orion.



BAE Orion

The equipment package consists of an EM 302 Multibeam Echo Sounder, EM 2000 Multibeam Echo Sounder, external sensors, services and training. The installation will take place in Guayaquil in June 2009. One of the first tasks of BAE Orion is to survey Ecuador's EEZ around the Galapagos Islands.

# Orders for EA 400 Single beam Echo sounders

After many years of contacts and testing of the EA 400 single beam echo sounder, Kongsberg Maritime Holland has received orders for the delivery of many EA 400 single beam echosounders with single and dual frequencies for the survey vessels of RWS.



These vessels are operating in all kinds of waterways in Holland and partly also at the North Sea area for shallow and deep waters. The EA 400 echo sounder is awarded to be the best due to the versatile set-up in combination with the third party software QINSy which is also the standard data acquisition soft-

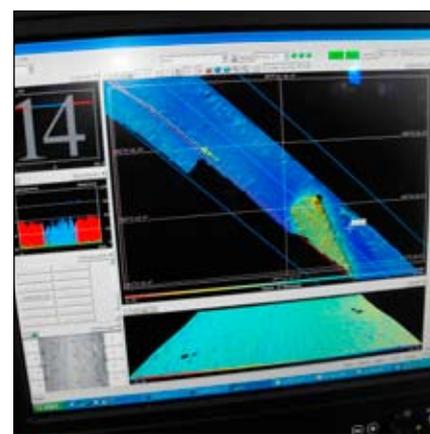
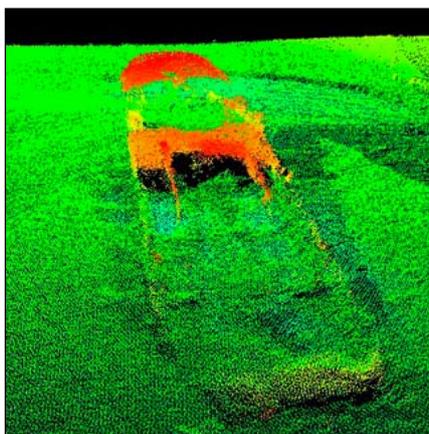
ware for RWS, and the easy operation of the

EA 400 operating software. RWS is looking for main suppliers of survey equipment and will be standardised to reliable brands for the Survey equipment. Delivery and commissioning of

the EA 400 single beam echo sounders is during 2009. These ordered echo sounders will replace the old Atlas DESO-25. RWS has also ordered in addition the EA 400 echo sounders for the newly built patrol vessels which are responsible for monitoring the navigational depths in the Dutch rivers and canals.

# EM 3002 and Seapath 200 demonstration in Peru

Kongsberg Maritime has very successfully conducted a five day EM 3002 and Seapath 200 demonstration in El Callao, Lima, Peru March 2nd to March 6th, 2009.



There were more than 20 participants from DHN (Dirección de Hidrografía y Navegación), the Hydrographic Office in Peru, and the demonstrations in Puerto Callao were performed onboard the hydrographic launch, H/L IMARPE III.

The demo included installation, setting to work and calibration of an EM 3002 and the Seapath 200, performing the demonstration and demobilization. Kongsberg

Maritime performed the work in coordination with our local representative, Robinson Marine Electronics SA with excellent support from DHN. It was amazingly hard work for the first three days installing the equipment and performing calibration operations.

Many interesting targets were found in Puerto Callao. Some examples are shown above.



## New product release!

# EM 2040, the world's only true wide band high resolution multibeam.

The new multibeam system, EM 2040, sets new standards in the shallow water and inspection survey markets

The EM 2040, which is the world's only true wide band high resolution multibeam was officially released at Kongsberg Maritime's FEMME 2009 user conference in Lisbon, 21st – 24th April 2009. The EM 2040 is designed to meet all requirements for shallow water mapping and survey inspection. This is achieved through exceptional resolution and performance, including the ability to fulfill required along track coverage at twice the survey speed.

The EM 2040 is highly flexible and can be used for multiple applications: 400 kHz for very high resolution inspection, 300 kHz for near bottom survey and 200 kHz for deeper waters. It is a unique design, and Kongsberg Maritime has integrated several advanced functions, such as:

- Dual swath per ping to allow twice the survey speed
- FM chirp to achieve a much longer range capability
- Complete roll, pitch and yaw stabilization
- Nearfield focusing both during transmit and receive
- Modular system with beamwidths of 0.5x1, 1x1 and 1x2

"The introduction of the EM 2040 multibeam will definitely set a new standard in the shallow water mapping and survey inspection market. It is the only true wide-band multibeam in the market today, with multiple operation frequencies and a very high resolution and performance," comments Helge Uhlen Product Sales Manager Hydrography, Kongsberg Maritime. "It is a flexible solution and can be used across multiple applications. We believe that this new 'all in one multibeam' will be a market leader in the years to come."



The basic EM 2040 consists of four units; transmit transducer, receive transducer, processing unit and an operator workstation. The EM 2040 has a standard depth rating of 6000 m and is fully prepared for installation and operation on subsea vehicles such as AUVs and ROVs.

The EM 2040 fits well in Kongsberg Maritime's extensive product portfolio and enables the world's leading multibeam manufacturer to offer a complete range of systems; from deep water survey with the EM 122 and EM 302, through medium water with EM 710, and now the EM 2040 for shallow water survey and inspection together with the EM 3002 and the GeoSwath+.

## GeoSwath sonars play a key role in South Australia port development



The GeoSwath transducer head stowed for transit on the Felix.

Two GeoSwath wide swath bathymetric sonars are being used for regular hydrographic port surveys around the South Australian coast, providing bathymetry and side scan data for use in the development and maintenance of this important national infrastructure. Recent projects include the pre, progress, and post-dredge monitoring of the major shipping channels to Port Adelaide and Port Giles which were deepened to accommodate panamax vessels.

HydroSurvey Australia is the hydrographic survey business arm of Flinders Ports, with the core task of performing recurrent surveys of navigational channels and berths for design and maintenance purposes. As well as using the GeoSwath

data for planning future port developments this survey programme is an integral part of Flinders Ports' risk mitigation strategy. HydroSurvey now carries out regular navigational hydrographic work at all the main shipping ports and minor boat havens in South Australia, over 100km of channels and 50 berths.

As a core part of their expanding range of survey equipment HydroSurvey has taken delivery of a second GeoSwath interferometric sonar from GeoAcoustics Ltd, a Kongsberg Maritime Company. The wide swath width demonstrated by their first GeoSwath (delivered in 2000 and upgraded in 2004) allowed unprecedented rapid survey coverage in shallow waters, resulting in significant productivity gains and achieving total insonification over large areas, with sounding data exceeding IHO S44 special order survey standard for depth accuracy.

The two GeoSwath systems are mounted on HydroSurvey's NoosaCat twin-hulled survey launches. The 'Pathfinder' is an 11 metre NoosaCat 3900-Series with a 250kHz GeoSwath head deployed on a central 'periscope'-mount between the hulls. The 'Felix' is a trailerable 5 metre Noosa-

Cat 1800-Series with a mounting plate for a customised 250kHz GeoSwath transducer arm fixed to the port side gunwale.

In addition to their core survey functions, HydroSurvey Australia undertakes contract hydrographic and bathymetric surveys for various projects including: design and construction of commercial ports and marinas; locating shoals and reefs; and to measure coastal sand migration. The GeoSawth Sonar's shallow water capabilities also make it ideal for river and lake surveys; in 2001 HydroSurvey were commissioned to survey Lake Burragorang (behind Warragamba Dam), 60km west of Sydney. With a storage volume of 2 million megalitres this is one of the largest domestic water supply dams in the world, supplying approximately 80% of the water delivered to Sydney. Sydney Catchment Authority required a bathymetric survey to measure the volume of sedimentation post-construction and to form a baseline for future surveys. The 'Felix' performed the GeoSwath survey in a single field operation providing total bottom coverage of the lakebed to the existing water level.

# Hydrography Students Train with KM Holland



Last week, Kongsberg Maritime in Holland conducted a demo and learning period with students from the Institute Willem Barentz at the Dutch Island Terschelling where the institute is located.

a mini transponder MST 319. For this test and calibration the students earn the points they need to continue their study of Hydrographer. They still need to study for another year, but with the motivation they had during the installation and test this will pose no problem for them. The installation, testing and calibration took 4 days in total.

The students had the opportunity to learn how to install and calibrate the portable HiPAP 350P. The Willem Barentz institute has its own vessel named "Octans" which is equipped with all kinds of

equipment e.g. Kongsberg EM 950. The students installed the HiPAP 350P transducer on a pole and hoisted the MPT 313 transponder on the Waddenzee seabed. For positioning the Side Scan fish we used

## Purchase of EM 122 - For new GEMS vessel MV Kommandor Jack



New GEMS vessel: MV Kommandor Jack.

GEMS is pleased to announce they have undertaken the long term charter of the dynamic positioned integrated geophysical/geotechnical survey vessel, MV Kommandor Jack. A new Kongsberg EM 122 deepwater multibeam system has been installed together with state of the art communications equipment as well as a full range of shallow to deep water geophysical and seabed coring/ CPT testing equipment.

The vessel is now fully mobilised, calibrated and working on the 1st of two major cable route survey projects awarded to GEMS in Europe/West Africa.



## Training autumn semester 2009 APOS Basic - APOS LBL - HiPAP Technical

Week	Date	Course
35	August 25 - 27	HiPAP Technical
35	August 25 - 26	APOS LBL Operator
38	September 17 - 18	APOS Basic
44	October 27 - 28	APOS Basic
45	November 3 - 5	APOS LBL Operator
48	November 25 - 27	HiPAP Technical

